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BULLETIN
OF THE
TORREY BOTANICAL CLUB.

Vol. XIV.]

New York, April, 1887.

[No. 4.]

A Descriptive List of Staten Island Diatoms.*

BY E. A. SCHULTZE.

Plate LXVI.

NAVICULA AMPHIRHYNCHUS, Ehr.

Navicula amphirhynchus, Ehr. Amer. 1843, p. 129, t. III., i., fig. 10; Kütz., Bacill., p. 95, t. IV., fig. 13, t. XXI., fig. 11, and t. XXVIII., fig. 47; Rabenh., Süßw. Diat., p. 40, t. VI., fig. 50; Sm., Syn., Vol. I., p. 51, pl. XVI., fig. 142; Ralfs in Prit. Infus., p. 901, pl. XII., fig. 6; Donkin, p. 34, pl. 5, fig. 9; Van Heurck, Syn. Diat. Belg., pl. XIII., fig. 5.

N. producta, Sm., Syn., Vol. i., p. 51, pl. XVII., fig. 144; Ralfs in Prit. Infus., p. 902, pl. VII., fig. 66.

N. affinis, var., Rabenh., E. Diat., p. 196, (var. a *genuina*).

Valve elliptical, with produced capitate extremities; striæ fine, distinct, granular, transverse in the middle, and toward the extremities oblique, reaching to the median line; slightly shortened opposite the central nodule, and interrupted near the margin by one or two longitudinal lines.

Hab.—Fresh water, not frequent. In ponds, Clifton, New Dorp, Huguenot. Plate LXVI., fig. 1. Fossil in the San Fiore, Italy, deposit.

NAVICULA APICULATA, De Bréb.

Navicula apiculata, De Bréb., Diat. of Cherb., p. 16, fig. 5; Ralfs in Prit. Infus., p. 903; Donkin., p. 56., pl. VIII., figs. 6a, 6b.

N. rostellum, Greg., p. 16, pl. i., fig. 20; Sm. Syn., vol. II., p. 93.

Valve oblong, elliptical, produced at the extremities; striæ reaching to the median line, and oblique from the central nodule toward the extremities, somewhat distant.

[*The descriptions of species given in this paper are based upon a comparison of the authorities quoted, a careful elimination of points upon which there is a disagreement, and then a comparison of the amended descriptions with species found in the waters of Staten Island.

The works named are out of print, and most of them are so rare as to be found only in public libraries, hence the descriptions and figures will prove of value to students.

C. H. KAIN.]

Hab.—Marine, scarce. In sandy gatherings from South Beach, Prince's Bay and Clifton. (Fig. 2.)

NAVICULA AMPHISBÆNA, Bory.

Navicula amphisbæna, Kütz., Bacill., p. 95, t. III., figs. 41 and 42; Rabenh., Stüssw. Diat., p. 40, t. VI., fig. 66; Sm. Syn., vol. i., p. 51, pl. XVII., fig. 147; Ralfs., in Prit. Infus., p. 899, pl. VII., fig. 72; Donkin, p. 36, pl. V., fig. 13; Van Heurck, pl. XI., fig. 7.

N. ventricosa, Ehr.

Frustulia depressa. Kütz., p. 21, fig. 27.

Valve elliptical, constricted into rounded apices; striæ fine, oblique and shorter at the middle of the valve, producing a lanceolate, median blank space.

Hab.—Fresh water, frequent. In ponds, Clifton, Stapleton, New Dorp, New Brighton. (Fig. 3.)

NAVICULA AFFINIS, Ehr.

Navicula affinis, Rabenh., Stüssw. Diat., p. 40, t. VI., fig. 58; Kütz., Bacill., p. 95, t. XXVIII., fig. 65 and t. XXX., figs. 45 and 46; Ralfs in Prit. Infus., p. 902, pl. XII., fig. 32; Sm., Syn., Vol. i., p. 50, pl. XVI., fig. 143; Van Heurck, pl. XIII., figs. 4, 6.

N. ampliata, Ehren.

N. liber, var.

Valve elliptical, slightly constricted toward the extremities; striæ transverse and reaching to the median line, shorter opposite the central nodule and crossed by a longitudinal line near to and parallel with the margin.

Hab.—Fresh water; common. In ponds, Clifton, New Dorp, Huguenot, New Brighton. (Fig. 4.)

NAVICULA INFLATA, Kütz.

Navicula inflata. Kütz., Bacill., p. 99, t. III., fig. 36; Sm., Syn., Vol. i., p. 50, pl. XVII., fig. 158; Rabenh., p. 191; Donkin, p. 21, pl. III., fig. 9; Ralfs in Prit. Infus., 1861, p. 899.

Pinnularia inflata, Rabenh., Stüssw. Diats., p. 44, t. V., fig. 10 c.

Valve elliptical, with produced extremities; striæ oblique; frustule small.

Hab.—Fresh water. In ponds, Clifton. (Fig. 5.) Fossil in the San Fiore, Italy deposit.

NAVICULA ASPERA, Ehr.

Stauroptera aspera, Ehr., Rabenh., Stüssw. Diat., p. 49, t. IX. fig. 1.,

Frustulia fulva, Bréb.

Stauroneis aspera, Kütz., Bacill. p. 106., t. XXIX., fig. 12.; Ralfs, in Prit. Infus., p. 914; Van H., pl. X., fig. 13.

Stauroptera achnanthes, Rabenh., Sussw. Diats., p. 49., t. IX., fig. 2.

Stauroneis achnanthes, Kutz., Bacill., p. 106, t. XXIX., figs. 20 and 22; Ralfs in Prit. Infus., p. 913.

Stauroneis pulchella, Sm., Syn., Vol. I., p. 61, pl. XIX., fig. 194.; Ralfs in Prit. Infus., p. 914., pl. VII., fig. 77; Donkin, p. 62., pl. X., figs. 1a 1b and 1c.

Valve elliptical-lanceolate with obtuse extremities; striæ oblique and granular, forming a stauros at the central nodule.

Hab.—Marine, not frequent. South Beach, Clifton and Prince's Bay. (Fig. 6.)

NAVICULA BINODIS, Ehr.

Navicula binodis, Ralfs in Prit. Infus., 1861, p. 893; Rabenh., Sussw. Diats., p. 41, t. V., fig. 5; Sm., Syn., Vol. I., p. 53, pl. XVII., fig. 159; Kutz., Bacill., p. 100, t. III. fig. 35; Donkin, p. 38, pl. VI., fig. 3; Van Heurck, Suppl., pl. B., fig. 33.

Valve oblong, constricted opposite the central nodule, and terminating in produced, narrow extremities; striæ indistinct.

Hab.—Fresh water, frequent, not abundant. In ponds, Clifton, New Brighton. (Fig. 7.)

NAVICULA DICEPHALA, Kütz.

Navicula dicephala, Kutz., Bacill., p. 96, pl. 28, fig. 60, 62c.; Sm., Syn., p. 53, pl. XVII., f. 157; Brun, Diat., p. 76., pl. VII., fig. 34; Van Heurck, pl. VIII., figs. 33, 34.

Pinnularia dicephala, Ehr.

Valve linear, constricted toward the rounded extremities; striæ transverse, granular; large central nodule more or less square; median line often double.

Hab.—Fresh water, frequent. In ponds, Clifton, New Brighton and Garretsons. (Fig. 8.)

NAVICULA DIDYMA, Ehr.

Navicula didyma, Kutz., Bacill., p. 100, t. IV., fig. 7., t. XXVIII., fig. 75; Ralfs in Prit., Infus., pl. XV., fig. 12; Donkin, p. 51, pl. VII., figs. 8a and 8b.; Sm., Syn., Vol. I., p. 53; Van Heurck, pl. IX., figs. 5, 6.

Pinnularia didyma, Rabenh., Sussw. Diats., p. 46, pl. VI., fig. 26.

Diploneis didyma, Ehr.

Valve more or less constricted in the centre; extremities broadly oval; striæ granular, transverse, but toward the extremities oblique, less pronounced near the median line.

Hab.—Marine, frequent. South Beach, Clifton, Prince's Bay and salt meadows at New Dorp. (Fig. 9.)

NAVICULA INFLEXA, Greg.

Pinnularia inflexa, Rabenh., Eur., Diats., p. 218.

Navicula inflexa, Ralfs in Prit. Infus., p. 905; Donkin, p. 54, pl. VIII., figs. 2a and 2b.

Frustule small; valve lanceolate, with conspicuous terminal nodules; striæ oblique, connivent, and shorter near the central nodule.

Hab.—Marine, scarce. Prince's Bay. (Fig. 10.)

NAVICULA CUSPIDATA, Kütz.

Navicula cuspidata, Kutz., Bacill., p. 94., t. III., figs. 24 and 37; Sm. Syn., Vol. I., p. 407, pl., XVI., fig. 131; Ralfs in Prit., Infus., p. 905, pl. XII., fig. 5; Rabenh., Sussw Diats., p. 37, t. V., fig. 16; and Europ. Diats., p. 170; Donkin., p. 39., pl. VI., fig. 6; Brun., p. 66, pl. VII., fig. 6; Van Heurck, Syn., pl. 12, fig. 4.

Valve broadly lanceolate, with slightly produced apices; striæ parallel, transverse, very finely dotted and reaching to the median line.

Hab.—Fresh water, common. In ponds, Clifton, New Brighton. (Fig. 11.)

NAVICULA GIBBA, Ehr.

Navicula gibba, Van Heurck, Suppl. pl. A., fig. 12.

Pinnularia gibba, Sm., Syn., Vol. I., p. 58., pl. XIX., fig. 180; Brun., p. 85, pl. VIII., fig. 17.

Pinnularia tabellaria, Sm., Syn., vol. I. p. 58., pl. XIX., fig. 181.

Stauroptera gibba, Ehr., Rab., Sussw., Diat., p. 49., t. IX., fig. 3.

Stauroneis gibba, Kutz., Bacill., p. 107, t. XXIX., fig. 24; Ralfs in Prit. Infus., p. 914.

Valve linear, inflated in the centre and at the extremities; striæ not reaching the median line, costate, oblique.

Hab.—Fresh water, common. In ponds and wayside ditches at Clifton, New Brighton, New Dorp. (Fig. 12.)

NAVICULA HUMEROSA, De Bréb.

Navicula humerosa, Sm., Syn., Vol. II., p. 93; Ralfs in Prit. Infus., p. 903; Rabenh., Europ. Diats., p. 20; Donkin, p. 18., pl. III., fig. 3; Van Heurck, pl. II, fig. 20.

N. quadrata.

N. crassa.

Valve elliptical-linear; extremities truncate; striæ oblique, granular, reaching nearly to the median line, shortened opposite the central nodule, thus forming a blank space.

Hab.—Marine, frequent. South Beach, Clifton, and in the brackish water of the salt meadows at New Dorp. (Fig. 13.)

Mr. Donkin remarks that "this species is very variable in size and outline. In elongated specimens it is frequently constricted in the middle; it is closely allied to *N. latissima* and *N. granulata*, but readily distinguished from them by its very much finer

striæ, and by its outline near the extremities, which are much more produced.

NAVICULA ELLIPTICA, Kütz.

Navicula elliptica, Kutz., Bacill., p. 98, t. XXX., fig. 55; Rabenh., Europ. Diats., p. 179; Sm., Syn., Vol II., p. 92; Ralfs in Prit. Infus., p. 899; Van. Heurck, pl. X, fig. 10; Donkin, p. 7, pl. I., fig. 6.

N. ovalis, Sm., Syn., Vol. I., p. 48., pl. XVII., fig. 153.

Valve oval, or linear-elliptical, striæ granular, connivent, separated from the median line on each side by a curved longitudinal line bulging outward at the central nodule.

Hab.—Brackish water, common. Salt meadows at New Dorp. (Fig. 14.)

NAVICULA HITCHCOCKII, Ehr.

Navicula Hitchcockii, Kutz., Bacill., p. 101; Ralfs in Prit., Infus., p. 894, pl. VII., fig. 62; Donkin, p. 29., pl. V., fig 4.

Valve oblong with triundulating margins terminating in cuneate apices; striæ fine and transverse, reaching to the median line.

Hab.—Fresh water, scarce. In ponds, Clifton, New Brighton, (Fig. 15.)

NAVICULA LYRA, Ehr.

Navicula lyra, Kutz., Bacill., p. 94., t. XXVIII., fig. 55; Sm., Syn., Vol. II., p. 93; Greg., D. of the Clyde, p. 13, pl. I., fig. 13; Ralfs in Prit. Infus., p. 897; Rab., Eu. Diat., p. 177; Donkin, p. 14, pl. II., fig. 7; Van Heurck, pl. 10, fig. 1.

Valve elliptical-linear; extremities produced and rounded or cuneate; striæ oblique, moniliform, interrupted by two longitudinal unstriated bands branching out from the central nodule toward the extremities in the form of a lyre.

Hab.—Marine, frequent. South Beach, Clifton, Prince's Bay, (Fig. 16.)

NAVICULA IRIDIS, Ehr.

Navicula iridis, Kutz., Bacill., p. 92, t., XXVIII., fig. 42; Ralfs in Prit. Infus., p. 907; Rabenh., Eu., Diat., p. 171; Van Heurck, pl., XIII., fig. 1; Donkin, p. 30, pl. V., fig. 6.

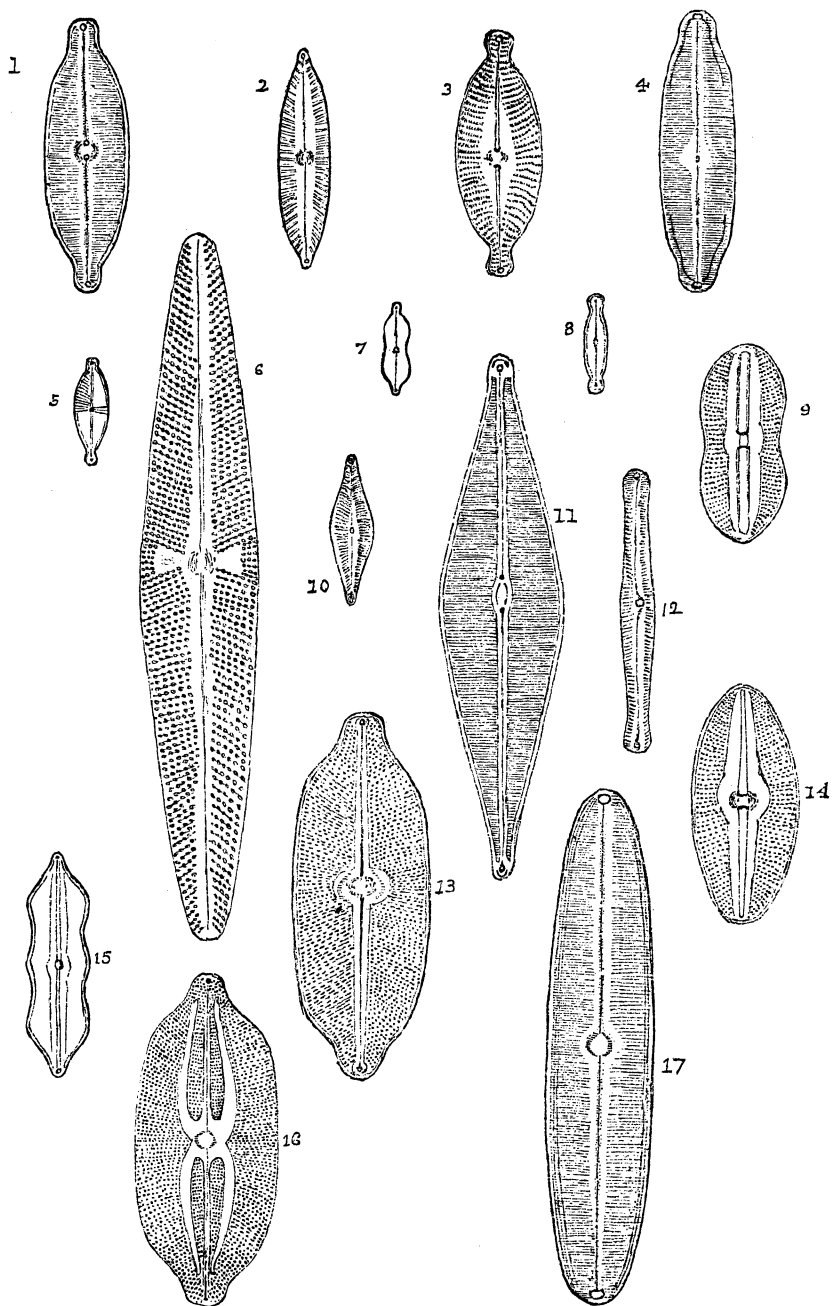
Pinnularia iridis, Rabenh., Sussw., Diat., p. 42, t. VI., fig. 1.

N. firma, Sm., Syn., Vol. I., p. 48, pl. XVI., fig. 138.

Valve linear-oblong, with obtuse extremities; striæ fine, transverse, reaching to the median line, longitudinally crossed near the margin.

Hab.—Fresh water, frequent. Clifton, New Brighton, New Dorp. (Fig. 17)

Bulletin of the Torrey Botanical Club, Plate LXVI.



Diatoms of Staten Island.